HISTORIA MATHEMATICA **12** (1985), 91–97

ABSTRACTS

Edited by ALBERT C. LEWIS

The purpose of this department is to give sufficient information about the subject matter of each publication to enable users to decide whether to read it. It is our intention to cover all books, articles, and other materials in the field.

Books for abstracting and eventual review should be sent to this department, with an extra copy sent directly to the editor of the Book Reviews Department if the publisher wishes to accelerate the process. Materials should be sent to Dr. Albert C. Lewis, Bertrand Russell Editorial Project, McMaster University, Hamilton, Ontario L8S 4M2, Canada.

Readers are invited to send reprints, autoabstracts, corrections, additions, and notices of publications that have been overlooked. Be sure to include complete bibliographic information, as well as transliteration and translation for non-European languages. We need volunteers willing to cover one or more journals for this department.

In order to facilitate reference and indexing, entries are given abstract numbers which appear at the end following the symbol #. A triple numbering system is used: the first number indicates the volume, the second the issue number, and the third the sequential number within that issue. For example, the abstracts for Volume 12, Number 1 are numbered: *12.1.1*, 12.1.2, 12.1.3, etc. The abstract numbers of books are italicized.

The initials in parentheses at the end of an entry indicate the abstractor. In this issue there are abstracts by Victor Albis, Judy V. Grabiner, Jens Høyrup, Albert C. Lewis, and Christoph Meinel.

ALBIS, VÍCTOR S., editor. 1983. *A C. F. Gauss (1777–1977)*. Bogotá: Universidad Nacional de Colombia. i + 94 pp. Articles (abstracted individually) on the life and works of C. F. GAUSS on the occasion of the bicentennial of his birth, presented at a special meeting held at Cali (Colombia), during the 7th National Mathematical Colloquium, 1977. (VA) *#12.1.1*

ALBIS, VÍCTOR S., AND ÁLVAREZ, RENÉ. 1983. Los trabajos de Gauss sobre la teoría de las paralelas. In *12.1.1*, pp. 1–11. Translation and commentary upon C. F. GAUSS manuscript synopsis (appearing in Gauss, *Werke*, Band 8, pp. 202–209) on NON-EUCLIDEAN GEOMETRY. (VA) #12.1.2

ARCAVI, A., AND BRUCKHEIMER, M. 1984. Development and evaluation of materials on the history of mathematics for teachers. *HM* **11**, 232. (ACL) #12.1.3

ARENAS GERMÁN. 1983. Acerca de algunos trabajos físicos de Carl Friedrich Gauss. In *#12.1.1*, pp. 67–80. The works of C. F. GAUSS on TERRESTRIAL MAGNETISM and ELECTROMAGNETISM are examined in a historical context. (VA) #12.1.4

ARNOLD, D. H. 1983. The *Mécanique physique* of SIMEON POISSON: The evolution and isolation in France of his approach to physical theory (1800–1840). *Archive for History of Exact Sciences* **28**, 243–361; **29**, 37–94, 287–307. In ten parts, includes a description of physics in France after the Revolution, the Laplacian program, dissatisfaction with Fourier's treatment of heat, and Poisson's closing synthesis *Traité de physique mathématique*. Bibliography. (ACL) #12.1.5

ARRIGHI, GINO. 1979. Il *Libro d'arismetrica* del Petriboni (prima metadel Quattrocentro). *Bollettino Storico Pisano* **48**, 65–88. PETRUS BONUS. *Iris CB 1982*, 867. (ACL) #12.1.6

0315-0860/85 $3.00

ARRIGHI, GINO. 1980. Some unpublished items from Ms., Lat. 80 (Petau 53), of the Library of Geneva. [In Italian.] *Physis—Rivista Storia della Scienza* **21,** 341–349. Transcription of three manuscripts including one by JEAN FUSORIS. *MR* 83e:01009. (ACL) #12.1.7

ARRIGHI, GINO. 1980. The mathematics of BUONACCORSO GHIBERTI (1451–1516). [In Italian.] *Physis—Rivista Storia della Scienza* **22,** 477–489. *MR* 83e:01013. (ACL) #12.1.8

BADOLATI, ENNIO. 1979. KEPLER'S EQUATION and the NEAPOLITAN mathematical school. [In Italian.] *Rendiconto dell'Accademia delle Scienze Fisiche Matematiche Napoli, Serie 4* **46,** 5–25. *MR* 83e:01026. (ACL) #12.1.9

BARAGAR, ALVIN. 1982. History of the Department of Mathematics at the University of ALBERTA, CANADA. *Folio* (25 November 1982), 5–11. Covers the period 1908–1982 and includes photographs. See notice in *HM* **11,** 221. (ACL) #12.1.10

BEKKEN, OTTO B. 1984. *Una historia breve del Algebra.* Lima, Peru: Sociedad Matematica Peruana. 119 pp. Based on lectures on the development of ALGEBRA, with emphasis on the number concept. See *HM* **11,** 229, for further details. (ACL) *#12.1.11*

BENIS-SINACEUR, HOURYA. 1984. De D. Hilbert à E. Artin: Les différents aspects du dix-septième problème et les filiations conceptuelles de la théorie des corps réels clos. *Archive for History of Exact Sciences* **29,** 267–286. "From DAVID HILBERT to EMIL ARTIN: The different aspects of Hilbert's 17th problem and the conceptual filiations to the theory of real closed FIELDS." E. LANDAU C. SIEGEL. (ACL) #12.1.12

BERGGREN, JOHN L. 1984. ABRAHAM J. SACHS (1914–1983): In memoriam. *HM* **11,** 125. (ACL) #12.1.13

BERGMANN, WERNER. 1980. Der Traktat *De mensura astrolabii* des HERMANN VON REICHENAU. *Francia: Forschungen zur Westeuropäischen Geschichte* **8,** 65–103. *Isis CB 1982,* 868. (ACL) #12.1.14

BIERMANN, KURT-R. 1984. Alexander von Humboldts Anspruch auf einen Platz in der Historiographie der Astronomie. *Die Sterne* **60,** Heft 2, 96–100. ALEXANDER VON HUMBOLDT'S claim to a place in the historiography of astronomy. (ACL) #12.1.15

BIERMANN, KURT-R. 1984. "Was ist das für ein Mann!": Elemente Humboldtscher Grösse. *Wissenschaft und Fortschritt* **34**(4): 96–99. Illustrated popular account of the life of ALEXANDER VON HUMBOLDT (1769–1859). (ACL) #12.1.16

BOTT, RAOUL. 1979. Some recollections from 30 years ago. In *Constructive approaches to mathematical models. (Proceedings of conference in honor of R. J. DUFFIN, Pittsburgh, PA, 1978),* pp. 33–39. New York: Academic Press. BOTT–DUFFIN THEOREM. MORSE THEORY. *MR* 83g:01040. (ACL) #12.1.17

BRIEVA BUSTILLO, EDUARDO. 1983. La determinación de la órbita de Ceres. In *12.1.1,* pp. 81–94. C. F. GAUSS's method for the determination of ORBITS, as expounded in *Theoria motus . . . ,* is discussed. (VA) #12.1.18

BRIGAGLIA, ALDO, AND NASTASI, PIETRO. 1984. Le soluzioni di Girolamo Saccheri e Giovanni Ceva al "Geometram quaero" di Ruggero Ventimiglia: Geometria proiettiva italiana nel tardo seicento. *Archive for History of Exact Sciences* **30,** 7–44. The solutions of GIROLAMO SACCHERI and GIOVANNI CEVA to the *Geometram quaero* of RUGGERO VENTIMIGLIA: PROJECTIVE GEOMETRY in late 17th-century Italy. English abstract and a bibliography included. (ACL) #12.1.19

CAMPEDELLI, MARIA GIUDITTA. 1980. Regular convex POLYHEDRA. [In Italian.] *Archimede: Rivista per gli Insegnanti e i Cultori di Matematiche Pure e Applicate* **32,** 66–76. Illustrated. *MR* 83e:01014. (ACL) #12.1.20

CAMPOS, ALBERTO. 1983. La teoría gaussiana de las superficies. In *12.1.1*, pp. 22–65. A historical approach to the concepts and methods introduced by C. F. GAUSS for the study of DIFFERENTIAL GEOMETRY, with a translation of the summary of *Disquisitiones generales circa superficies curvas*, presented by Gauss to the Göttingen Royal Society. (VA) #12.1.21

CAMPOS, ALBERTO. 1984. *Matemáticaa para filosofía. Libro primero: De Pitágoras a Euclides*. Bogotá: Universidad Nacional de Colombia. 2nd edition. 220 pp. TEXTBOOK intended for mathematics teaching to PHILOSOPHY undergraduate students. The fundamental concepts of mathematics are introduced through the presentation of original texts and pertinent comments on them. Includes: Pythagoras, Theon of Smyrna, Archytas, Zeno of Elea, Plato, Aristotle, and Euclid. (VA) *#12.1.22*

CARTAN, HENRI. 1979/80. NICOLAS BOURBAKI and contemporary mathematics. *Mathematical Intelligencer* **2,** 175–180. *MR* 83g:01033. (ACL) #12.1.23

CASSINET, JEAN. 1981. L'Ecole italienne et les mises en évidence de l'utilisation d'un principe de choix dans les demonstrations entre 1890 et 1902. *Rendiconti del Seminario Matematica Università e Politecnico di Torino* **39**(3), 51–68. AXIOM OF CHOICE. (ACL) #12.1.24

CHRISTIAN, CURT C. 1984. GÖDEL's contribution to the justification of Leibniz' notation of the infinitesimals. *HM* **11,** 215–219. (ACL) #12.1.25

COPERNICUS, NICOLAUS. 1982. *Sobre las revoluciones de los orbes celestes*. Madrid: Editora Nacional. 556 pp. Hardbound US $20.00 approximately. First Spanish translation of *De revolutionibus orbium coelestium libri VI* from the second volume of *Opera omnia* (Varsovia: Polish Academy of Sciences, 1973). The present edition includes an introduction, chronology, selective bibliography, and authoritative notes by Carlos Mínguez and Mercedes Testal, who are also responsible for the fine translation. (VA) *#12.1.26*

CSÁSZÁR, ÁKOS. 1975. Mathematical sciences. In *Science and scholarship in Hungary*, pp. 144–157. Budapest: Corvina. HUNGARY. *MR* 83g:01111b. (ACL) #12.1.27

DADIĆ, ŽARKO. 1984. Some methodological aspects of Getaldic's mathematical works. *HM* **11,** 207–214. GETALDIC (GHETALDIC or GHETALDUS). (ACL) #12.1.28

DESCARTES, RENÉ. 1981. *Discurso del método, dióptrica, meteoros y geometría*. Madrid: Alfaguara. 490 pp. Hardbound US $15.00 approximately. Spanish translations of the following: *Discours de la méthode, La dioptrique, Les meteores, La géométrie*. Introduction, translation, and notes by Guillermo Quintás Alonso. (VA) *#12.1.29*

EDSON, W. A. 1984. Chebyshev's approximations. *HM* **11,** 233. P. CHEBYSHEV. (ACL) #12.1.30

EVANS, GILLIAN R. 1980. The *saltus Gerberti:* The problem of the "leap." *Janus* **67,** 261–268. POPE SYLVESTER II (=GERBERT). *Isis CB 1982*, 874. (ACL) #12.1.31

FEINGOLD, MORDECHAI. 1984. *The mathematicians' apprenticeship: Science, universities and society in England, 1560–1640*. Cambridge: Cambridge Univ. Press. viii+248 pp. Bibliography. Index. Hardback $37.50. According to the Introduction, "the aim of this book will be to demonstrate that the English universities contributed significantly to the critical dialogue that vitalized the scientific community in the period between 1560 and 1640. It will be argued that the stereotyped view of Oxford and Cambridge as institutions devoid of mathematical instruction and inimical to new scientific modes of thought is unfounded." (ACL) *#12.1.32*

FISCHER, IRENE K. 1981. At the dawn of GEODESY. *Bulletin Géodésique* **55,** 132–142. *MR* 83g:01002. (ACL) #12.1.33

FOLKERTS, MENSO. 1981. Mittelalterliche mathematische Handschriften in westlichen Sprachen in der Herzog August Bibliothek Wolfenbüttel: Ein vorläufiges Verzeichnis. *Centaurus* **25,** 1–49. Medieval, Western-language MANUSCRIPTS in the Herzog August Library Wolfenbüttel. *Isis CB 1982*, 876. (ACL) #12.1.34

FOWLER, D. H. 1984. ERIC GARDNER TURNER (1911–1983): In memoriam. *HM* **11**, 126–130. (ACL) #12.1.35

GALILEO GALILEI. 1981. *Consideraciones y demostraciones matemáticas sobre dos nuevas ciencias*. Madrid: Editora Nacional. 452 pp. Paperbound US $10.00 approximately. Spanish translation of *Discorsi e demostrazioni mathematiche intorno due nuove scienze* done by Javier Sádaba, with an introduction by Carlos Solís. The translation is based on the edition by Franz Brunetti of *Opere* (Torino, 1964) and the 1638 Leyden edition. (VA) #12.1.36

GARIO, PAOLA. 1981. A CAUCHY'S theorem on the RIGIDITY OF CONVEX POLYHEDRA. [In Italian.] *Archimede: Rivista per gli Insegnanti e i Cultori di Matematiche Pure e Applicate* **33**, 53–69. *MR* 83d:01029. (ACL) #12.1.37

GISPERT, HÉLÈNE. 1980. Correspondance de Fréchet (1907–1926) et son apport à la théorie de la dimension (avec 3 lettres de Brouwer à Baire). *Cahiers du Séminaire d'Histoire des Mathématiques. Institut Henri Poincaré. Paris* **1**, 69–120 *MR* 83d:01044a. (ACL) #12.1.38

HENDRY, JOHN. 1984. The evolution of WILLIAM ROWAN HAMILTON's view of algebra as the science of pure time. *Studies in History and Philosophy of Science* **15**, 63–81. Examines the question of Kant's influence on Hamilton. (ACL) #12.1.39

HØYRUP, JENS. 1984. *Babylonian algebra from the viewpoint of geometrical heuristics: an investigation of terminology, methods, and patterns of thought*. Roskilde, Denmark: Roskilde University Centre. iv+146 pp. Bibliography. Paperbound. (Available from the author at Roskilde University Centre, P. O. Box 260, DK-4000 Roskilde, Denmark.) On the basis of an investigation of the structure of mathematical TERMINOLOGY and methods the author proposes that the basis of OLD BABYLONIAN ALGEBRA was a geometrical HEURISTIC; the basic elements of this heuristic are investigated, and used to interpret a number of geometrical texts on the PARTITION OF FIGURES, etc. (JH) *#12.1.40*

ISRAEL, GIORGIO, AND NURZIA, LAURA. 1984. The Poincaré–Volterra Theorem: A significant event in the history of the theory of ANALYTIC FUNCTIONS. *HM* **11**, 161–192. V. VOLTERRA. GEORG CANTOR. (ACL) #12.1.41

JAHNKE, HANS NIELS. 1981. Zahlen und Grössen—historische und didaktische Bemerkungen. *Mathematische Semesterberichte* (Göttingen) **28**(2), 202–229. Numbers and variables—historical and didactic comments. EDUCATION. (ACL) #12.1.42

JOHNSEN, KARSTEN. 1984. Zum Beweis von C. F. Gauss für die Irreduzibilität des p-ten Kreisteilungspolynoms. *HM* **11**, 131–141. C. F. GAUSS's proof of the irreducibility of the pth cyclotomic polynomial. (ACL) #12.1.43

JOHNSEN, KARSTEN. 1984. Der "Untergruppensatz" von P. Hoyer—25 Jahre vor O. Schreier. *Archive for History of Exact Sciences* **29**, 377–383. PAUL HEINRICH AUGUST HOYER (1856–1944), a school mathematics teacher, published a number of original and significant papers, including one in 1902 containing a version of O. SCHREIER's subgroup theorem published in 1927. (ACL) #12.1.44

JONGSMANS, F. 1981. Quelques pièces choisies dans la correspondance d'Eugène Catalan. *Bulletin Société Royale des Sciences de Liége* **50**, 287–309. A selection from the correspondence of the Franco-Belgian mathematician E. CATALAN (1814–1894). G. PEANO, T. J. STIELTJES. RIBAUCOUR. *MR* 83d:01031. (ACL) #12.1.45

JUSSILA, OLLI. 1981. History of the functional equation $f(x + y) = f(x) + f(y)$. [In Finnish.] *Arkhimedes* **33**, 193–203. A. L. CAUCHY, G. DARBOUX, G. HAMEL, *MR* 83d:01033. (ACL) #12.1.46

KENNEDY, E. S. 1984. Applied mathematics in the tenth century: Abu'l-Wafā', calculates the distance Baghdad–Mecca. *HM* **11**, 193–206. ABU'L WAFĀ'. (ACL) #12.1.47

KILMISTER, C. W. 1981. The history of NEWTON'S LAWS. *Bulletin of the Institute of Mathematics and Its Applications* **17**, 173–176. *MR* 83a:01020. (ACL) #12.1.48

KNORR, WILBUR. 1984. "La croix des mathématiciens": The Euclidean theory of irrational lines. *Bulletin of the American Mathematical Society, New Series* **9**, 41–69. The essential idea of the theory of Book Ten of EUCLID's *Elements* is viewed through consideration of the Euclidean constructions of regular plane and solid figures. On the formal aspects of the Book, the observation is made that "the most striking feature . . . is surely how its author encumbers the proofs through his interests in system." (ACL) #12.1.49

KOJIMA, OSAMU. 1980. Lundin's accounting treatises. *Kwansei Gakuin Daigaku Annual Studies* **29**, 151–159. Eighteenth-century books on BOOKKEEPING and PRACTICAL ARITHMETIC by ROBERT LUNDIN. *MR* 83e:01029. (ACL) #12.1.50

LANGE, HANNE. 1979. *Les données mathématiques des traites du XIIe siècle sur la symbolique des nombres*. Copenhagen: Paludan. 128 pp. (Cahiers de l'Institut du Moyen-Age Grec et Latin, Univ. Copenhague, 32.) The mathematical contributions of twelfth-century treatises on number SYMBOLS. NOTATION. *Isis CB 1982*, 881. (ACL) *#12.1.51*

LAY-YONG, LAM, AND TIAN-SE, ANG. 1984. Li Ye and his *Yi gu yan duan* [Old mathematics in expanded sections]. *Archive for History of Exact Sciences* **29**, 237–266. An account of a thirteenth-century Chinese work by LI YE on the construction and formulation of QUADRATIC EQUATIONS derived from problems on squares, circles, rectangles, and trapeziums. (ACL) #12.1.52

LÜTZEN, JESPER. 1984. Sturm and Liouville's work on ordinary linear DIFFERENTIAL EQUATIONS. The emergence of STURM–LIOUVILLE THEORY. *Archive for History of Exact Sciences* **29**, 309–376. "This paper is an attempt to supply a comprehensive and coherent treatment . . . taking all published as well as unpublished sources into account." Includes bibliography and chronological summary. (ACL) #12.1.53

MEINEL, CHRISTOPH, editor. 1984. *Der handschriftliche Nachlass von Joachim Jungius in der Staats- und Universitätsbibliothek Hamburg. Katalog*. Stuttgart: Hauswedell. x1+154 pp. DM 180.00. (Katalog der Handschriften der Staats- und Universitätsbibliothek Hamburg, Vol. 9.) Catalog of the manuscripts of JOACHIM JUNGIUS (1584–1657) in the State and University Library of Hamburg. The collection includes more than 5000 folios on mathematical matters, including geometry, arithmetica, stereometrica, analytica, and chronology. A dissertation on the mathematical content of the Jungius archives is in progress under the supervision of Professor C. J. Scriba of the Institut für Geschichte der Naturwissenschaften of Hamburg University. (CM) *#12.1.54*

MOORE, GREGORY H. 1983. Lebesgue's measure problem and Zermelo's axiom of choice: The mathematical effects of a philosophical dispute. *Annals of the New York Academy of Sciences, History and Philosophy of Science* **412**, 129–154. "Lebesgue's philosophical scruples prevented him from pursuing fully the questions that his Measure Problem led others to raise. At the same time, his work reveals how a mathematician of the first rank may subtly fail to see how he is fundamentally violating his philosophical scruples in his own work. By contrast, Sierpiński and his Polish colleagues, without insisting that one accept the AXIOM OF CHOICE, explored its effects on the Measure Problem with clarity, depth, and consistency." HENRI LEBESGUE. WACLAW SIERPIŃSKI. (ACL) #12.1.55

NEUENSCHWANDER, E. 1983. René Descartes und die Entstehung der neuzeitlichen Mathematik. *Vierteljahrsschrift der Naturforschenden Gesellschaft in Zürich* **128**(4), 243–281. Traces the development of modern mathematics from the end of the Middle Ages to the time of Leibniz and Newton. (ACL) #12.1.56

NEUENSCHWANDER, E. 1984. *Die Edition mathematischer Zeitschriften im 19.Jahrhundert und ihr Beitrag zum wissenschaftlichen Austausch zwischen Frankreich und Deutschland*. Göttingen: mathematisches Institute der Universität Göttingen. 128 pp. Bibliography. Paperbound. Provides an overview of 19th-century mathematical JOURNALS, with a table of authors' frequencies of appearance in four of the more important, and describes the contribution of journals to the scientific interaction between France and Germany. Appendices include transcripts of letters from K. W. BORCHARDT to R. LIPSCHITZ, relevant correspondence of J. LIOUVILLE, and the correspondence between G. DARBOUX and G. J. HOUEL. (ACL) *#12.1.57*

NEWTON, ISAAC. 1977. *Optica o tratado de las reflexiones, refracciones, inflexiones y colores de la luz*. Madrid: Alfaguara. 454 pp. Hardbound US $16.00 approximately. Spanish translation of Newton's *Opticks*, not including the *Tractatus de quadratura curvarum*. It includes, however, an introduction, a useful chronology, an extensive bibliography, and an analytic index. All these and the translation are due to Carlos Solís. (VA) *#12.1.58*

NEWTON, ISAAC. 1982. *Principios matmáticos de la filosofía natural*. Madrid: Editora Nacional. 908 pp. Hardbound US $19.00 approximately. First Spanish translation of *Philosophiae naturalis principia mathematica*. Edited with an extensive introduction and useful and interesting notes by Antonio Escohotada. This welcome and careful translation had to wait almost three hundred years to appear. (VA) *#12.1.59*

NEWTON, ISAAC. 1984. *The optical papers of ISAAC NEWTON*, Vol. I, *The optical lectures, 1670–1672*. Edited by Alan E. Shapiro. Cambridge: Cambridge Univ. Press. xix+627 pp. Illustrated. Bibliography. Index. Hardback $135.00. Contains the complete text, together with translation and commentary, of the two surviving versions of Newton's *Optical lectures*—his first major scientific treatise and his most comprehensively developed mathematical and experimental account of his theory of color and refraction. (ACL) *#12.1.60*

O'DONNELL, SEÁN. 1983. WILLIAM ROWAN HAMILTON: *Portrait of a prodigy*. Dublin: Boole Press. xvi+224 pp. Illustrations. Index. Hardback $24.95. (Profiles of Genius Series, 2.) Makes use of the biographies by R. P. Graves and Thomas Hankins (Abstract #1676), and of new archival sources, in trying to "come to grips with Hamilton's formidable personality rather than his achievements, to further an understanding of the individual rather than of what he did." The author describes his approach as psychological. (ACL) *#12.1.61*

PÉREZ, JESÚS HERNANDO. 1983. El método de Arquímedes. *Boletín de Matemáticas (Bogotá)* **16,** 118–139. ARCHIMEDES' METHOD presented as precursor of the methods of the calculus. (VA) #12.1.62

PICUTTI, ETTORE. 1980. The *Book of squares* of LEONARDO OF PISA and the problems of indeterminate analysis in the Palatine Codex 557 of the National Library in Florence. [In Italian.] *Physis—Rivista Storia della Scienza* **21,** 195–339. With introduction and comments. *MR* 83e:01010. (ACL) #12.1.63

POULLE, EMMANUEL, editor and translator. 1984. *Les tables alphonsines avec les canons de Jean de Saxe*. Paris: Éditions du Centre National de la Recherche Scientifique. 246 pp. Index. ISBN 2-222-03430-2. Hardback 200F. (Sources d'Histoire Médiévale Publiées par l'Institut de Recherche et d'Histoire des Textes.) A transcription and French translation with commentary of the ALPHONSINE TABLES and the canon or manual of their use by JEAN DE SAXE published in 1483. (ACL) *#12.1.64*

POWELL, NEWMAN W. 1979. FIBONACCI and the gold mean: Rabbits, rumbas, and rondeaux. *Journal of Music Theory* **23,** 227–231. Interrelationships between arithmetic, geometry, and music. *Isis CB 1982*, 888. (ACL) #12.1.65

ROWE, DAVID E. 1984. The old guard under the new order: KURT FRIEDRICHS on his meeting with FELIX KLEIN. *Mathematical Intelligencer* **6,** 74–76. In a 1982 taped interview with the author, Friedrichs told of his first meeting Klein in 1922 in Göttingen. Accompanied by photographs of Klein, Friedrichs, Klein's house, and the "Auditorium" (mathematical center) at Göttingen. (ACL) #12.1.66

SEN, S. N., AND BAG, A. K., editors. 1983. *The Sulbasūtras of Baudhāyana, Āpastamba, Kātyāyana and Mānava with text, English translation and commentary*. New Delhi: Indian National Science Academy. v+293 pp. Bibliography. Index. Hardback $30.00. The texts are ANCIENT INDIAN manuals for the construction of various types of altars for fire-sacrifice. They deal with rules for measurement and construction and include, for example, several methods of constructing a square and a rectangle which led to the formulation of the equivalent of Pythagoras' Theorem. The introduction deals with the genesis and philosophical significance of the texts. (ACL) *#12.1.67*

SMITH, STEVEN B. 1983. *The great mental calculators: The psychology, methods, and lives of calculating PRODIGIES, past and present.* New York: Columbia Univ. Press. Bibliography. Index. Illustrations. $25.00. Discusses the psychology of mental calculation; calculating methods used by such calculators; lives and calculating accomplishments of over twenty calculating prodigies, including Jedediah Buxton, Zerah Colburn, Johann Martin Zacharias Dase, Truman Henry Safford, Alexander Craig Aitken, Salo Finkelstein, Shakuntala Devi. The approach is informal and anecdotal. (JVG) *#12.1.68*

SWERDLOW, N. M., AND NEUGEBAUER, O. 1984. *Mathematical astronomy in Copernicus's "De revolutionibus."* New York/Berlin/Heidelberg/Tokyo: Springer-Verlag. 2 parts (xvi+711 pp.). 222 Figures. Subject index. Bibliography. Hardback $78.00. (Studies in the History of Mathematics and Physical Sciences, 10.) Neugebauer's commentary on *De revolutionibus*, originally intended for inclusion in *A history of ancient mathematical astronomy*, has been continued by Swerdlow in this work which includes a biographical account of COPERNICUS but concentrates on mathematical aspects of his astronomy. Most attention is given areas not previously treated in depth, such as numerical work in the derivation of parameters which Swerdlow states occupies the greatest part of *De revolutionibus*. (ACL) *#12.1.69*

TANKARD, JAMES W., JR. 1984. *The Statistical Pioneers.* Cambridge, Mass.: Schenkman. 168 pp. Hardback $19.95. Paperback $11.95. Designed as a supplementary textbook for STATISTICS classes, in order to "place the major ideas of statistics in their historical setting and tell the stories of the men who developed them." Covers the 17th century; Abraham de Moivre and the Normal Curve, with mention of Laplace, Gauss, and Quetelet; Karl Pearson and the Chi-Square Test; W. S. Gosset and the *t* Test; R. A. Fisher and the Analysis of Variance; Statistical Creativity; in seven chapters. Extensive bibliography. (JVG) *#12.1.70*

ULIVI, ELISABETTA. 1980. The teaching of elementary algebra: Clairaut. [In Italian.] *Archimede: Rivista per gli Insegnanti e i Cultori di Matematiche Pure e Applicate* **32,** 130–135. An account of the work of the French mathematician and physicist A. C. CLAIRAUT (1713–1765) as a writer of elementary algebra texts. *MR* 83d:01039. (ACL) #12.1.71

UNGURU, SABETAI, AND ROWE, DAVID E. 1982. Does the quadratic equation have Greek roots? A study of "geometric algebra," "application of areas," and related problems. *Libertas Mathematica* **2,** 1–62. The second and concluding part (see #11.3.81) of a treatise that is perhaps the strongest and clearest argument yet made against attributing what amounts to algebraic methods to classical GREEK MATHEMATICS. The usual failure to properly make a distinction between geometric algebra and application of areas, it is stated, makes the "standard interpretation . . . wrong on all counts" and results in "overlooking the very change that took place in the creation of algebra." (ACL) #12.1.72

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